

ABSTRACT OF THE DISCLOSURE

A porous film having high strength, homogeneous porous structure, and excellent affinity for electrolytic solutions and suitable for use as a separator for batteries and capacitors; a process for producing the film; and a battery and capacitor each employing the porous film as a separator. The porous film comprises a resin composition including from 70 to 99.9% by weight of an high molecular weight polyolefin resin and from 0.1 to 30% by weight of a polymer having a polyacrylate, polymethacrylate, poly(ethylene oxide), poly(propylene oxide), poly(ethylene propylene oxide), polyphosphazene, poly(vinyl ether) or polysiloxane structure as or in a main chain and having a chain oligo(alkylene oxide) structure in side chains. The porous film can be obtained by heating and kneading the high molecular weight polyolefin resin and the polymer in a solvent to thereby obtain a kneaded product, forming the kneaded product into a gel-state sheet, rolling and/or stretching the sheet, and then subjecting the sheet to a solvent-removing treatment.